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Antioxidant characterization and cosmetic application of extracts from brown alga *Saccharina latissima*

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Studies have shown that brown seaweed contains a wide range of bioactive compounds. Hence, brown algae extracts may potentially be applied in facial cream formulations as a functional ingredient e.g. contributing with antioxidant activity. Moreover, the antioxidant activity of brown algae extract can also increase the oxidative stability, and thereby, protect lipids in the facial cream formulations, which are prone to oxidation. Our ongoing work aims to extract highly antioxidative compounds from brown algae *Saccharina latissima* (sugarkelp) and find application for these extracts in facial cream. Hence, more than thirty *S. latissima* extracts were screened for total phenolic content (TPC) and *in vitro* antioxidant properties. Based on the screening, three extracts were chosen for full characterization, and the antioxidants, such as phenolic compounds and pigments were identified. Furthermore, formulation trials were conducted in which the extracts were added to facial cream and the antioxidant efficacy and stability are under evaluation. It was found that the antioxidant composition and properties *in vitro* were highly dependent on the extraction media. The water extract contained higher amounts of phenolic compounds compared to ethanol extracts, and also showed the highest metal chelating ability and radical scavenging capacity *in vitro*. Moreover, whereas ethanol extracted pigments, such as chlorophylls and fucoxanthin, only β -carotene was identified in the water extract. These results will be presented on the poster together with preliminary results of the stability studies.